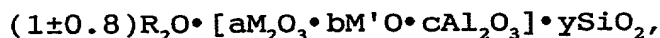


### Abstract of the Disclosure

An ammonia decomposition catalyst wherein a first catalyst having a crystalline silicate which is represented by the formula in terms of molar ratio of oxides as  
5 dehydrated:



wherein R denotes an alkaline metal ion and/or hydrogen ion, M denotes a VIII group element, rare earth element, titanium, vanadium, chromium, niobium, antimony or gallium,  
10 M' denotes magnesium, calcium, strontium or barium,  $a \geq 0$ ,  $20 > b \geq 0$ ,  $a + c = 1$ ,  $3000 > y > 11$  or a specific porous material as a carrier and iridium or a noble metal as an active metal is present together with or covered with a second catalyst having at least one element selected from the group  
15 consisting of titanium, vanadium, tungsten and molybdenum, if necessary, as well as a method of using the same.